Attorney Docket No. 06618-706001
Serial No.: 09/682,593
Amendment dated October 31, 2003
Reply to office action dated July 2, 3003

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Currently amended) A method, comprising:

forming a sacrificial layer of material on a substrate;

covering said sacrificial layer of material with a polymer material;

removing said sacrificial layer to form a cantilevered polymer structure over a substrate using micromachining techniques; ~~and~~

forming at least one structure between said polymer structure and said substrate which avoids said polymer structure. sticking to said substrate after said removing;

forming a plurality of leg portions, extending between an extending portion of said cantilevered polymer structure, and said substrate; and

an additional etching to free said leg portions from said substrate.

2 -3. (Canceled)

4. (Currently amended) A method as in claim [[3]] 1, wherein said additional etching operation comprises a gas phase etching which removes a portion of said substrate adjacent said leg portions.

5. (Currently amended) A method as in claim [[3]] 1, wherein said additional etching operation comprises etching using BrF_3.

6. ~~A method as in claim 1,~~ A method, comprising:

forming a sacrificial layer of material on a substrate;

covering said sacrificial layer of material with a polymer material;

removing said sacrificial layer to form a cantilevered polymer structure over a substrate using micromachining techniques;

forming at least one structure between said polymer structure and said substrate which avoids said polymer structure sticking to said substrate after said removing; and

wherein said forming at least one structure comprises forming an anti stick layer on said substrate, said anti stick layer formed of a different material than a material of said substrate.

7. (Original) A method as in claim 6, wherein said substrate is formed of silicon, and said anti stick layer is formed of a material other than silicon.

8. (Original) A method as in claim 7, wherein said material other than silicon includes polysilicon.

9. (Original) A method as in claim 7, wherein said material other than silicon includes a titanium material.

10. (Original) A method as in claim 6, wherein said anti stick layer is part of a sacrificial layer, and further comprising removing said sacrificial layer.

11. (Currently amended) A method as in claim 10, further comprising [[a]] forming a plurality of leg portions, extending between an extending portion of said cantilevered polymer structure and said substrate.

12. (Currently amended) ~~A method as in claim 11,~~
A method, comprising:
forming a sacrificial layer of material on a substrate;

covering said sacrificial layer of material with a polymer material;

removing said sacrificial layer to form a cantilevered polymer structure over a substrate using micromachining techniques;

forming at least one structure between said polymer structure and said substrate which avoids said polymer structure sticking to said substrate after said removing;

wherein said forming at least one structure comprises forming an anti stick layer on said substrate, said anti stick layer formed of a different material than a material of said substrate;

wherein said anti stick layer is part of a sacrificial layer, and further comprising removing said sacrificial layer;

further comprising a forming a plurality of leg portions, extending between an extending portion of said cantilevered polymer structure and said substrate; and

~~further comprising~~ etching away portions of said substrate which abut near said leg portions.

13. (Original) A method as in claim 1, wherein said polymer material includes Parylene.

14. (Original) A method as in claim 1, wherein said polymer material is one with a Young's modulus of substantially 4 GPa.

15. (Original) A method as in claim 1, wherein said cantilevered polymer structure has an unsupported cantilever portion which is greater than 100 microns in length.

16. (Original) A method, comprising:

obtaining a silicon substrate; and

forming a cantilevered polymer portion over said silicon substrate, and unsupported relative to said silicon substrate; ~~and~~

preventing said cantilevered polymer portion from sticking to said silicon substrate;

wherein said preventing comprises forming legs connected to said cantilevered polymer portion, said legs extending towards said silicon substrate; and

wherein said forming legs comprises forming legs which extend to said substrate and may stick to said substrate, and subsequently etching to free said legs from said substrate.

17 - 18. (Canceled)

19. (Currently amended) ~~A method as in claim 16,~~

A method, comprising:

obtaining a silicon substrate;

forming a cantilevered polymer portion over said silicon substrate, and unsupported relative to said silicon substrate;

preventing said cantilevered polymer portion from sticking to said silicon substrate; and

wherein said etching to free said legs comprises forming removing a portion of said substrate around said legs to free the legs from the substrate.

20. (Currently amended) ~~A method as in claim 19,~~ A method, comprising:

obtaining a silicon substrate;

forming a cantilevered polymer portion over said silicon substrate, and unsupported relative to said silicon substrate;

preventing said cantilevered polymer portion from sticking to said silicon substrate;

wherein said etching to free said legs comprises forming removing a portion of said substrate around said legs; and

wherein said etching comprises BrF3 etching to remove a portion of said substrate around said legs.

21. (Currently amended) A method as in claim [[18]] 16, wherein said polymer includes Parylene.

22. (Original) A method as in claim 16, wherein said preventing comprises forming a layer that prevents said cantilevered portion from sticking to said substrate.

23. (Original) A method as in claim 22, further comprising removing said layer after preventing said cantilevered portion from sticking to said substrate.

24. (Original) A method as in claim 23, wherein said forming a layer comprises forming a layer of polysilicon.

25. (Original) A method as in claim 23, wherein said forming a layer comprises forming a layer of titanium.

26. (Currently amended) A structure, comprising:

a silicon substrate; and

a polymer cantilevered element, overlying said silicon substrate, and forming a cavity between a bottom surface of said cantilevered element and said silicon substrate, said polymer

cantilevered element having a thickness less than 100 microns, and a length greater than 100 microns; and

further comprising an indentation in said substrate in an area of said leg, wherein said leg is separated from said substrate.

27. (Original) A structure as in claim 26, wherein said cantilevered element further includes at least one leg thereon, which leg extends between said bottom surface of said polymer cantilevered element and said silicon substrate.

28. (Original) A structure as in claim 27, wherein said cantilevered element includes at least a plurality of legs thereon, each of which extends between said bottom surface and said silicon substrate.

29. (Canceled)